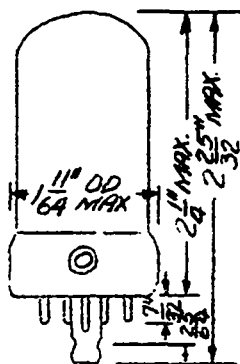


7B8

7B8

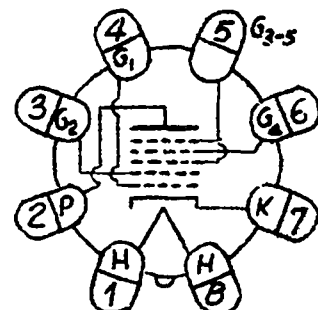
TENTATIVE DATA  
RAYTHEON TYPE 7B8

HEPTODE  
PENTAGRID CONVERTER  
Heater Type  
Glass Bulb Loktal Base



The 7B8 is a pentagrid type converter tube designed for use as a combined oscillator and mixer in superheterodyne receivers.

NOMINAL RATINGS  
Heater Voltage (a-c or d-c)  
Heater Current



BOTTOM VIEW OF SOCKET

7.0 volts  
0.32 amp

MAXIMUM AND MINIMUM RATINGS

|                                          |     |       |
|------------------------------------------|-----|-------|
| Maximum Plate Voltage                    | 250 | volts |
| Maximum Screen ( $G_3$ & $G_5$ ) Voltage | 100 | volts |
| Maximum Anode Grid ( $G_2$ ) Voltage     | 200 | volts |
| Maximum Anode Grid Supply Voltage        | 250 | volts |
| Minimum Control Grid ( $G_4$ ) Bias      | -3  | volts |
| Maximum Total Cathode Current            | 14  | ma    |

DIRECT INTERELECTRODE CAPACITANCES

|                                                                    |           |          |
|--------------------------------------------------------------------|-----------|----------|
| $G_4$ to P (Mixer Grid to Plate)                                   | 0.30 max. | $\mu$ mf |
| $G_4$ to $G_2$ (Mixer Grid to Oscillator Plate)                    | 0.20      | $\mu$ mf |
| $G_4$ to $G_1$ (Mixer Grid to Oscillator Grid)                     | 0.15      | $\mu$ mf |
| $G_1$ to $G_2$ (Oscillator Grid to Plate)                          | 0.8       | $\mu$ mf |
| $G_4$ to All Other Electrodes (Mixer Input Electrode)              | 9.5       | $\mu$ mf |
| $G_2$ to All Other Electrodes Except $G_1$ (Osc. Output Electrode) | 3.0       | $\mu$ mf |
| $G_1$ to All Other Electrodes Except $G_2$ (Osc. Input Electrode)  | 4.4       | $\mu$ mf |
| P to All Other Electrodes (Mixer Output Electrode)                 | 9.0       | $\mu$ mf |

TYPICAL FREQUENCY CONVERTER CONDITIONS

|                                                |           |       |            |
|------------------------------------------------|-----------|-------|------------|
| Heater Voltage                                 | 6.3       | 6.3   | volts      |
| Heater Current                                 | 0.3       | 0.3   | amp        |
| Plate Voltage                                  | 100       | 250   | volts      |
| Screen Voltage                                 | 50        | 100   | volts      |
| Anode Grid Voltage                             | 100       | -     | volts      |
| Anode Grid Supply Voltage                      | -         | 250 * | volts      |
| Control Grid Bias                              | -1.5 min. | -3    | volts      |
| Oscillator Grid Resistor                       | 50000     | 50000 | ohms       |
| Plate Resistance                               | 0.6       | 0.36  | megohm     |
| Conversion Transconductance                    | 360       | 550   | $\mu$ mhos |
| Plate Current                                  | 1.1       | 3.5   | ma         |
| Screen Current                                 | 1.3       | 2.7   | ma         |
| Anode Grid Current                             | 2.0       | 4.0   | ma         |
| Oscillator Grid Current                        | 0.25      | 0.4   | ma         |
| Control Grid Bias (approximate)                |           |       |            |
| For Conversion Transconductance = 6 $\mu$ mhos | -         | -35   | volts      |
| For Conversion Transconductance = 3 $\mu$ mhos | -20       |       | volts      |

\* Applied through a 20000 ohm series resistor.

from RMA release #162, Feb. 16, 1939